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ROAD ACCIDENTS IN HUNGARY

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1. CHANGES IN THE ROAD SAFETY SITUATION OF THE LAST DECADE, GENERAL EVALUATION OF THE PRESENT STATE

When analysing the long-term development of the statistical data relating to personal injury road traffic accidents (Figure 1), it can be stated that between 1990 and 2000 the road safety situation in Hungary improved considerably.

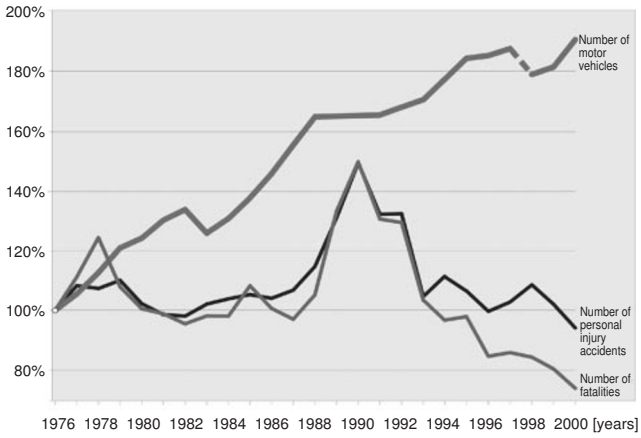

Fig. 1 Changes in the number of vehicles, personal injury accidents and road accident fatalities between 1976 and 2000

Table 1 shows the changes that took place between 1990 and 2000.

While in the decade following the year 1990, the size of the domestic vehicle fleet increased by 18%, the number of personal injury road accidents decreased by 37%, and the number of fatalities resulting fell by 51%, and the number of persons killed and injured due to these accidents saw a reduction of 39%. Consequently, the quantitative target of the National Road Safety Programme[1] (a 25–30% reduction in the number of people killed and seriously injured as a result of road accidents in comparison with the year 1992 by the year 2000) has been attained.

The rate of decrease was not uniform during the period being investigated. In built-up areas, for example, the number of accident fatalities decreased by 48% between 1990 and 1993 and by 23% between 1993 and 2000. The data for accident fatalities outside built-up areas were even more remarkable. A decrease of 39% was experienced between 1990 and 1996, while from 1996 to 2000 the decrease was 4%. Consequently, the rate of improvement fell considerably.

The level of the severity index characterising the outcome of road accidents also decreased, though not to the same extent.

While in 1990 an average of 875 persons were killed per 10,000 personal injury accidents, by 2000 this figure had fallen by 189 to 686.

Table 1 Changes in the number of vehicles, accidents resulting in personal injury and fatalities and injuries due to road traffic accidents between 1990 and 2000

Year	Number of road traffic accidents resulting in personal injury	Number of fatalities*	Number of fatalities and injuries	Number of motor vehicles at end of year
1990	**27,801**	**2,432**	**39,428**	**2,401,949**
1991	**24,589**	**2,120**	**34,796**	**2,471,254**
1992	**24,623**	**2,101**	**34,678**	**2,510,010**
1993	**19,527**	**1,678**	**27,108**	**2,545,397**
1994	**20,722**	**1,562**	**28,523**	**2,652,774**
1995	**19,817**	**1,589**	**27,475**	**2,749,466**
1996	**18,393**	**1,370**	**25,309**	**2,766,444**
1997	**19,097**	**1,391**	**26,148**	**2,795,985**
1998	**20,147**	**1,371**	**27,763**	**2,670,466****
1999	**18,923**	**1,306**	**25,976**	**2,706,459**
2000	**17,493**	**1,200**	**23,898**	**2,840,187**
Change between 1990 and 2000 (%)	**–37.1**	**–50.7**	**–39.4**	**+18.2**

* Death within 30 days as a result of the accident

** Apparent decrease caused by the removal from the register of vehicles previously registered but no longer in operation.

When analysing the road accident situation of the past decade, it can be stated that there were various factors behind the considerable improvement.

First of all, it is important to mention those consistent road safety measures, of which more than one had a positive influence on the number and/or the severity of road accidents in both the short, and long terms.

Of these measures, the most remarkable were the following:

- the reduction of the general speed limit within built-up areas from 60 to 50km/h, and
- the introduction of the mandatory use of daytime running lights for motor vehicles outside built-up areas.

Scientific investigations [2-4] support the fact that as a result of the first measure, within built-up areas the number of road accident fatalities decreased by 32% in the short term and by 14% in the long term. At the same time, following the introduction of the second measure, the number of frontal and crossing vehicle collisions outside built-up areas occurring during the daytime and in good visibility conditions fell by 13%.

The favourable effects of the above measures, which entered into force on 1st March 1993, are well illustrated in Figure 1. These benefits were backed up by intensified road safety propaganda supporting modifications to the Highway Code of the time, as well as by police enforcement. At the same time, more severe sanctions were adopted for offenders. During the period investigated, several other general road safety measures were also introduced, however, some of these remained ineffective due to insufficient levels of information and enforcement (e.g., the extension of the compulsory wearing of safety belts to include rear seats of passenger cars outside built-up areas[2], and the prohibition of the use of hand-held telephones while driving, etc.). Scientific effect analysis of part of the measures was omitted (e.g., introduction of probational driving licences), therefore there is no reliable information as to whether or not these measures had a positive influence on the level of road safety.

The road sector also made a significant contribution to the positive changes. The construction of roads bypassing settlements in the last decade, junctions developed into roundabouts, reconstructed railway crossings, new motorway sections, traffic engineering solutions becoming more and more professional and unified, better signalling systems and the upgrading of roads are just some examples taken at random to illustrate road safety improvement interventions.

The police control already mentioned and the intensity of the police presence also demonstrate the close relationship with road safety development. Just as the slackening of police control contributed to the deterioration of the accident situation in the period before 1990, so the intensification of police activity following this date produced a positive effect.

Nor should it be forgotten that in the course of the 10 years under examination, not only did the size of the Hungarian motor vehicle fleet increase, but it was also modernised continuously. This resulted in a higher level of active and passive safety of vehicles participating *de facto* in traffic and contributing to the favourable changes. At the same time, the chances of survival of those injured in accidents were also increased by improvements in emergency services and medical treatment. Of course, these factors can also be experienced in other countries.

Finally, it has to be noted – although not lessening the merits of those involved professionally in accident prevention – that the favourable trend has also been "helped" by certain economic and demographic effects. On the one hand, the significant decrease experienced in this period in the proportion of young novice drivers resulted in a drop in the traffic role of the group of road users with the highest accident risk; this undoubtedly influenced positively the level of road safety[2]. On the other hand, the results of traffic counts and fuel sales statistics show that in the period examined there was probably a small decrease in the volume of road traffic – at least provisionally – which in some periods (e.g., in 1991) also led to a decrease in the frequency of accidents.

To summarise, it may be stated that in the last decade, the level of domestic road safety improved significantly, even if the spectacular improvement of the statistical data was not always mirrored by the positive feeling of road users.

2. SOME FINDINGS AND CONCLUSIONS THAT CAN BE DRAWN FROM THE ANALYSIS

Figure 2 shows the percentage distribution of the number of fatalities and injuries as a result of road accidents from 1984 to 2000, according to their mode of participation in traffic.

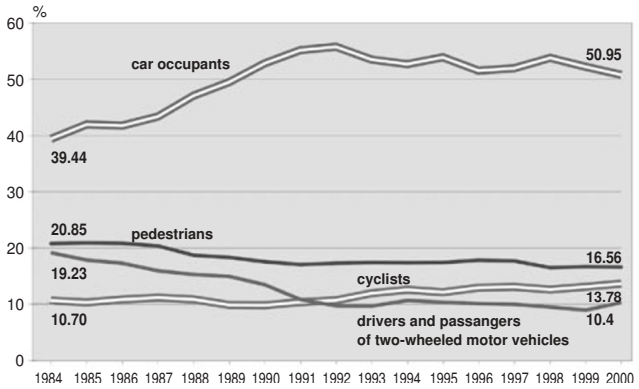

Fig. 2 Number of people killed and injured in road traffic accidents according to road user classes

The figure clearly shows that in the last decade, drivers or passengers in cars were the victims of road accidents in 51–55% of cases. It can quite obviously be assumed that in order to improve the situation, it is

important, among others, to increase the passive safety of car occupants. This is also confirmed by Figure 3, which illustrates the rates of safety belt wearing observed in the cases of car occupants in front and rear seats.

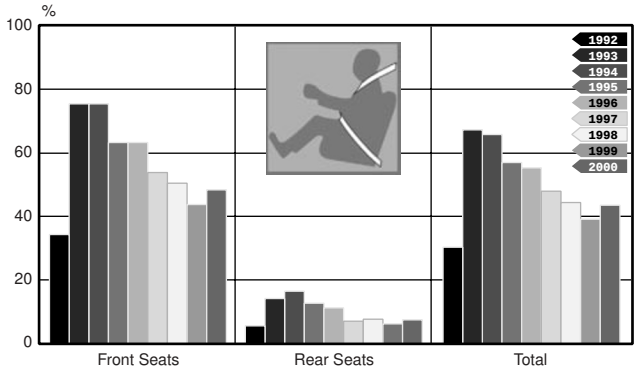

Fig. 3 Changes in the safety belt wearing rate of car occupants from 1992 to 2000

From this it can be stated that the 76% rate of safety belt wearing in the years 1993 and 1994 by occupants in the front seats of cars decreased continuously below 44%, not reaching 49% even in 2000, due to insufficient propaganda and enforcement. The rate in rear seats remained steady below 10% from 1996.

The average safety belt wearing rate of almost 70% in 1993 and 1994 (taking all seats into account) had fallen below 40% by 1999, and did not rise above 43% in 2000, which is also a very poor level by international standards (in countries with high levels of motorisation, the safety belt wearing rate of passenger car drivers and passengers is 90–95%).

Figure 4 shows the breakdown of the number of personal injury road accidents by causers.

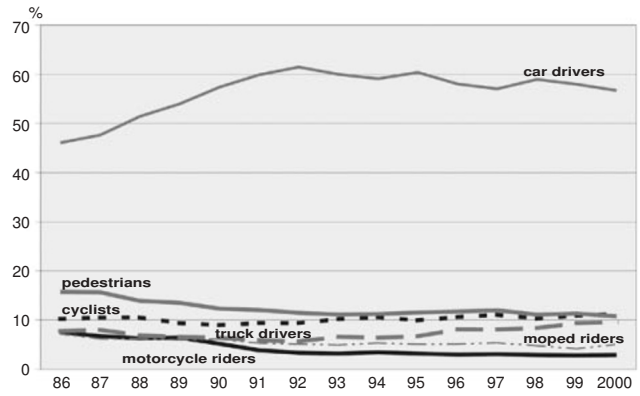

Fig. 4 Changes in the number of personal injury accidents according to the parties at fault in an accident

This diagram clearly shows that from 1992, the percentage relation between the different causer groups has changed little. This means that since that time, the resulting accident number has been distributed proportionally amongst the causer groups, with truck drivers proving the only exception. However, the importance of this group in accident prevention still falls into the background in comparison with car drivers. Nevertheless, the tendency is worthy of attention - due primarily to the high degree of severity of the accidents caused by truck drivers - and efforts must be made to stop and reverse this trend.

The significant role played by young car drivers in road safety is confirmed by the following data:

- almost 43% of the personal injury road accidents in the year 2000 were caused by car drivers under the age of 30;
- 44.70% of the car drivers killed or injured in 2000, were aged 30 or below.

The following priorities of the National Traffic Safety Programme which were formulated in 1992 could still be substantiated:

"The most important task is the improvement of the traffic behaviour of this target group and the decrease of its level of risk. This requires a strengthening of traffic discipline, and a widespread increase in behaviour consistent with the rules. To this end, information and more efficient police control may be the most effective method. (The former can only be effective in the longer term, while the latter in the shorter term too).

The goal of these measures must be to achieve compliance with speed limits and safe (appropriate) speeds, the prevention of driving under the influence of alcohol, a significant increase in the rate of safety belt wearing, an extensive rise in the awareness of the interests of other road users and the spread of traffic behaviour observing safety factors."

To summarise the above, it can be stated that in the period since 1992, there was basically no change either in relation to the causers of accidents, or as regard to the causes. Almost 60% of road accidents resulting in personal injury are still caused by car drivers. The three major accident causes continue to be the following:

- inappropriate choice of speed;
- non-observance of the rules of direction changes, progress and turning;
- non-observance of priority.

From the points of view of accident frequency and severity, the "inappropriate choice of speed" is unequivocally responsible for more than one-quarter of the personal injury accidents resulting from drivers' fault and for almost half of the fatalities.

Despite the recently experienced decrease, it is the car occupant group which yields more than half of the victims of road accidents (fatalities and injuries).

Car drivers, and primarily young car drivers, are the number one target group of national road safety activity, due to their rate of involvement in accidents, as both causers and victims.

The key issues of the national road safety situation, therefore, are the car drivers' choice of speed, safety belt

wearing, and, in a wider sense, their traffic behaviour.

Figure 5 shows the number of road accident fatalities per 100,000 inhabitants in the "Visegrád" countries, and in new and former federal provinces of Germany.

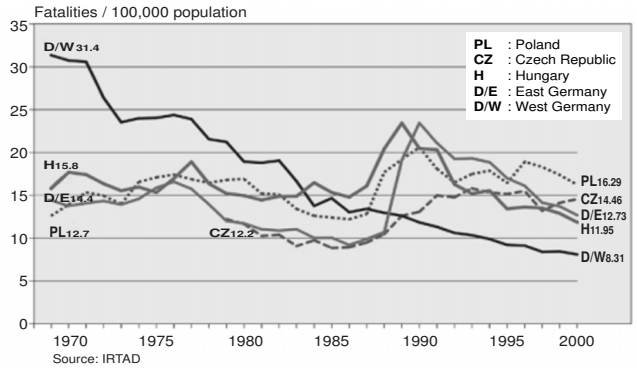

Fig. 5 Road traffic accident mortality rates in some selected countries

(It was not possible to acquire consistent data for Slovakia; and was thus omitted in Figure 5.) This indicator (the mortality rate) is not the most suitable from methodological points of view, but it can be used relatively well to compare countries with similar levels of motorisation. It can be seen that a change similar to that experienced in the other countries in transition occurred in the former GDR. The degree of deterioration was higher here than in any other country. It can also be stated on the basis of the figure that the "maximum" was the same in the former GDR and Hungary, whereas in Germany's new federal provinces it started one year later than in Hungary.

Of the "Visegrád" countries, the greatest decrease in the road accident fatality risk following the political and social transitions was experienced in Hungary.

3. IMPORTANT QUESTIONS FOR FUTURE ROAD SAFETY POLICY

The road safety situation in Hungary is unfavourable mainly with regard to the outcome and severity of accidents (probability of accident fatalities).

Therefore, the following questions require particular attention and handling:

- Motivation of politicians and decision-makers;
- Speed management (differentiated regulation, homogenisation, moderation);
- Increased passive safety (increased safety belt wearing rate);
- Prevention of driving under the influence of alcohol or drugs, and of drivers' (truck drivers) fatigue;
- Improved emergency facilities;
- Infrastructure development (motorways, bypasses of built-up areas, roundabouts, cycle-paths, etc.)

A concerted effort is needed in order to decrease accident severity in all fields. Although 70% of road accidents resulting in personal injury occur within built-up areas, almost 60% of accident fatalities are registered outside built-up areas, resulting from higher speeds and less homogeneous speed distribution. In other words, 30% of the accidents are responsible for 60% of the fatalities.

Outside built-up areas, attention must also be focused in the fields of education, enforcement and engineering on accident types characterised by the highest fatality rate. Frontal motor vehicle collisions and single-vehicle accidents are accidents of this type.

It is important to introduce and apply proper performance indicators in road safety activity, because the number of road accidents and their victims depends on many so-called external or background factors (e.g., demographic, economic effects, etc.).

The following questions are of basic importance:

- Role and utilisation of research results;
- Dilemma of restrictive measures;
- Establishment of optimal efficiency co-ordination organisations;
- Harmonisation and proportion of central and local activities;
- Cost-efficiency view in the utilisation of material resources;
- Determination and provision of necessary financing possibilities;
- Determination of the appropriate degree of police enforcement (staff, equipment, frequency, etc.);
- Efficient strategies for increased level of the enforcement of rules.

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